

Chemical Analysis Report

SO-DIST-2019-03-14-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

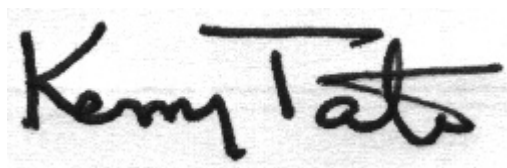
Event Description: **2019 SMP : Myakka Streams + philippe**
Request ID: **RQ-2019-03-04-70**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 09-APR-2019 11:02

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke at the end.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: MyakkaRiver(Tidal)@US41

Collection Date/Time: 03/13/2019 10:20

Field ID: G3SD0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2069849	EPA 8321B	2,4-D	0.0020	U	ug/L	P360490	
		Acesulfame K**	0.10	U	ug/L	P360352	MS
		AMPA**	0.10	U	ug/L	P360352	
		Acetaminophen**	0.0080	U	ug/L	P360490	
		Endothall**	0.25	U	ug/L	P360352	
		Glufosinate**	0.10	U	ug/L	P360352	
		Bentazon	0.0024	I	ug/L	P360490	
		Glyphosate**	0.10	U	ug/L	P360352	
		Carbamazepine**	8.0E-04	U	ug/L	P360490	
		Sucralose**	0.010	U	ug/L	P360352	
		Diuron	0.0028	I	ug/L	P360490	
		Fenuron	0.016	U	ug/L	P360490	
		Fluridone**	0.0048		ug/L	P360490	
		Imazapyr**	0.025		ug/L	P360490	
		Hydrocodone**	0.0020	U	ug/L	P360490	
		Ibuprofen**	0.020	U	ug/L	P360490	
		Imidacloprid	0.027	J	ug/L	P360490	MS
		Linuron	0.0040	U	ug/L	P360490	
		MCP	0.0020	U	ug/L	P360490	
		Naproxen**	0.0080	U	ug/L	P360490	
		Primidone**	0.0040	U	ug/L	P360490	
		Pyraclostrobin**	0.0020	U	ug/L	P360490	
		Triclopyr**	0.0040	U	ug/L	P360490	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Sample Location: Rock Creek@EisenhowerDr

Collection Date/Time: 03/13/2019 10:45

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2069776	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P360454	
	EPA 300.0	Bromide	13		mg Br/L	P360572	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P360802	
	SM 2540 D-97	TSS	8	IA	mg/L	P360633	
	SM 4500 F-C-97	Fluoride	0.46		mg F/L	P360805	
2069777	EPA 350.1 Rev. 2.0	Ammonia-N	0.070		mg N/L	P360669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P360714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P360665	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P360690	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P360839	
2069778	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P360479	
2069850	EPA 200.7 Rev. 4.4	Barium	15		ug/L	P360794	
		Calcium	119		mg/L	P360794	
		Iron	350	I	ug/L	P360794	
		Magnesium	239		mg/L	P360794	
		Potassium	73		mg/L	P360794	
		Sodium	1.92E+03		mg/L	P360794	
		Zinc	15	U	ug/L	P360794	
	EPA 200.8 Rev. 5.4	Aluminum	160	I	ug/L	P360794	
		Antimony	0.20	U	ug/L	P360794	
		Arsenic	1.48		ug/L	P360794	
		Boron**	873		ug/L	P360794	
		Cadmium	0.080	U	ug/L	P360794	
		Chromium	4.0	U	ug/L	P360794	
		Copper	1.6	U	ug/L	P360794	
		Lead	2.0	U	ug/L	P360794	
		Nickel	2.0	U	ug/L	P360794	
		Selenium	0.80	U	ug/L	P360794	
		Silver	0.040	U	ug/L	P360794	
		Thallium	1.0	U	ug/L	P360794	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Apollo Waterway @ Bend

Collection Date/Time: 03/13/2019 11:10

Field ID: G3SD0069

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2069779	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P360454	
	EPA 300.0	Bromide	19		mg Br/L	P360572	
	SM 2320 B-97	Total Alkalinity	91	A	mg CaCO3/L	P360802	
	SM 2540 D-97	TSS	5	I	mg/L	P360835	
	SM 4500 F-C-97	Fluoride	0.54		mg F/L	P360805	
2069780	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P360669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P360714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360665	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P360690	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P360840	
2069781	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P360479	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Little Alligator@Midway

Collection Date/Time: 03/13/2019 11:45

Field ID: G3SD0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2069782	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P360454	
	EPA 300.0	Bromide	31		mg Br/L	P360572	
	SM 2320 B-97	Total Alkalinity	131		mg CaCO3/L	P360802	
	SM 2540 D-97	TSS	4	I	mg/L	P360835	
	SM 4500 F-C-97	Fluoride	0.80		mg F/L	P360805	
2069784	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P360669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P360714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360665	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P360690	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P360907	
2069786	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P360479	
2069851	EPA 200.7 Rev. 4.4	Barium	17		ug/L	P360794	
		Calcium	208		mg/L	P360794	
		Iron	140	I	ug/L	P360794	
		Magnesium	552		mg/L	P360794	
		Potassium	169		mg/L	P360794	
		Sodium	4.51E+03		mg/L	P360794	
		Zinc	15	U	ug/L	P360794	
	EPA 200.8 Rev. 5.4	Aluminum	98	I	ug/L	P360794	
		Antimony	0.29	I	ug/L	P360794	
		Arsenic	2.23		ug/L	P360794	
		Boron**	2.06E+03		ug/L	P360794	
		Cadmium	0.080	U	ug/L	P360794	
		Chromium	4.0	U	ug/L	P360794	
		Copper	1.6	U	ug/L	P360794	
		Lead	2.0	U	ug/L	P360794	
		Nickel	2.0	U	ug/L	P360794	
		Selenium	0.80	U	ug/L	P360794	
		Silver	0.040	U	ug/L	P360794	
		Thallium	1.0	U	ug/L	P360794	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Little Alligator@Midway

Collection Date/Time: 03/13/2019 11:50

Field ID: G3SD0071_DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2069783	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P360454	
	EPA 300.0	Bromide	30		mg Br/L	P360572	
	SM 2320 B-97	Total Alkalinity	132		mg CaCO3/L	P360802	
	SM 2540 D-97	TSS	4	I	mg/L	P360835	
	SM 4500 F-C-97	Fluoride	0.79		mg F/L	P360805	
2069785	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P360669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P360714	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360665	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P360690	
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P360907	
2069787	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P360479	
2069852	EPA 200.7 Rev. 4.4	Barium	16		ug/L	P360794	
		Calcium	203		mg/L	P360794	
		Iron	220	I	ug/L	P360794	
		Magnesium	539		mg/L	P360794	
		Potassium	165		mg/L	P360794	
		Sodium	4.38E+03		mg/L	P360794	
		Zinc	15	U	ug/L	P360794	
	EPA 200.8 Rev. 5.4	Aluminum	150	I	ug/L	P360794	
		Antimony	0.26	I	ug/L	P360794	
		Arsenic	2.23		ug/L	P360794	
		Boron**	2.02E+03		ug/L	P360794	
		Cadmium	0.080	U	ug/L	P360794	
		Chromium	4.0	U	ug/L	P360794	
		Copper	1.6	U	ug/L	P360794	
		Lead	2.0	U	ug/L	P360794	
		Nickel	2.0	U	ug/L	P360794	
		Selenium	0.80	U	ug/L	P360794	
		Silver	0.040	U	ug/L	P360794	
		Thallium	1.0	U	ug/L	P360794	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Phillippi Creek@Proctor

Collection Date/Time: 03/13/2019 13:10

Field ID: G3SD0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2069788	EPA 180.1 Rev. 2.0	Turbidity	20	A	NTU	P360454	
	EPA 300.0 Rev. 2.1	Chloride	63		mg Cl/L	P361005	
		Sulfate	110		mg SO4/L	P361011	
	SM 2120 B	Color (true)	35	A	PCU	P360504	
	SM 2320 B-97	Total Alkalinity	236		mg CaCO3/L	P360897	
	SM 2540 C-97	TDS	564	A	mg/L	P360771	
	SM 2540 D-97	TSS	11	A	mg/L	P360632	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P360904	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P360671	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P360712	
2069789	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P360698	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P360604	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P360839	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P360480	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360454

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360794

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360794

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P360572

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361005

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361011

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360671

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360712

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360714

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360665

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360698

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360604

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360690

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360479

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360480

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P360352

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P360490

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P360504

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360802

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-97
Batch ID: P360897

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P360771

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360632

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360633

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360835

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P360904

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360839

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P360840

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P360907

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.4		P	85 - 115
Calcium	101		P	85 - 115
Iron	104		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	101		P	85 - 115
Sodium	102		P	85 - 115
Zinc	98.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.0		P	85 - 115
Antimony	96.8		P	85 - 115
Arsenic	101		P	85 - 115
Boron	96.0		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	99.4		P	85 - 115
Copper	97.3		P	85 - 115
Lead	95.2		P	85 - 115
Nickel	99.0		P	85 - 115
Selenium	98.8		P	85 - 115
Silver	100		P	85 - 115
Thallium	107		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P360572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361005

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361011

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360671

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	100		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360714

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360604

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360690

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360480

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.2		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P360352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	96.2		P	40 - 150
AMPA	88.8		P	40 - 150
Endothall	91.1		P	40 - 150
Glufosinate	89.5		P	40 - 150
Glyphosate	93.9		P	40 - 140
Sucralose	56.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	75.9		P	40 - 150
Acetaminophen	111		P	30 - 150
Bentazon	129		P	30 - 150
Carbamazepine	111		P	40 - 150
Diuron	120		P	40 - 150
Fenuron	127		P	40 - 150
Fluridone	127		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Ibuprofen	76.0		P	40 - 150
Imazapyr	99.5		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	103		P	40 - 150
MCPP	82.2		P	40 - 150
Naproxen	87.3		P	40 - 150
Primidone	119		P	40 - 150
Pyraclostrobin	82.3		P	40 - 150
Triclopyr	53.8		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P360504

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P360802

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P360897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	91 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P360904

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360839

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.7		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P360840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P360907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070721	Barium	91.9	90.3	P/P	80 - 120
2070721	Iron	100	99.6	P/P	80 - 120
2070721	Zinc	95.2	96.1	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070721	Aluminum	123	124	P/P	70 - 130
2070721	Antimony	96.1	95.2	P/P	70 - 130
2070721	Arsenic	108	105	P/P	70 - 130
2070721	Cadmium	88.5	88.6	P/P	70 - 130
2070721	Chromium	90.8	89.0	P/P	70 - 130
2070721	Copper	97.6	96.2	P/P	70 - 130
2070721	Lead	102	99.6	P/P	70 - 130
2070721	Nickel	88.9	87.5	P/P	70 - 130
2070721	Selenium	101	97.4	P/P	70 - 130
2070721	Silver	90.1	89.3	P/P	70 - 130
2070721	Thallium	108	106	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P360572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069080	Bromide	102	102	P/P	90 - 110
2070063	Bromide	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361005

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069714	Chloride	94.9		P	90 - 110
2069732	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069714	Sulfate	97.4		P	90 - 110
2069732	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069780	Ammonia-N	104	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069736	Ammonia-N	101	98.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069747	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069481	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360665

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069777	NO2NO3-N	94.8	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069738	NO2NO3-N	96.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069789	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070004	Total-P	98.2	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069781	O-Phosphate-P	95.9	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069748	O-Phosphate-P	98.9	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P360352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069254	Acesulfame K	139	155	P/F	40 - 150
2069254	AMPA	87.8	97.9	P/P	40 - 150
2069254	Endothall	90.9	101	P/P	40 - 150
2069254	Glufosinate	87.0	86.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069254	Glyphosate	114	119	P/P	40 - 140
2069254	Sucralose	49.1	54.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069849	2,4-D	94.4	96.9	P/P	40 - 150
2069849	Acetaminophen	103	90.8	P/P	30 - 150
2069849	Bentazon	78.8	75.9	P/P	30 - 150
2069849	Carbamazepine	102	92.4	P/P	40 - 150
2069849	Diuron	92.1	86.4	P/P	40 - 150
2069849	Fenuron	127	128	P/P	40 - 150
2069849	Fluridone	135	107	P/P	40 - 150
2069849	Hydrocodone	94.9	95.5	P/P	40 - 150
2069849	Ibuprofen	78.9	64.6	P/P	40 - 150
2069849	Imazapyr	65.2	55.8	P/P	40 - 150
2069849	Imidacloprid	183	169	F/F	40 - 150
2069849	Linuron	87.4	86.8	P/P	40 - 150
2069849	MCP	124	110	P/P	40 - 150
2069849	Naproxen	75.2	85.0	P/P	40 - 150
2069849	Primidone	114	102	P/P	40 - 150
2069849	Pyraclostrobin	79.7	67.5	P/P	40 - 150
2069849	Triclopyr	85.9	70.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069779	Fluoride	94.7	95.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P360904

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069509	Fluoride	96.7	96.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069806	Organic Carbon	96.2	96.3	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P360840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068810	Organic Carbon	96.8	97.0	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P360907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069943	Organic Carbon	96.4	98.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P360454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069788	Turbidity	1.47	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P360794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070721	Barium	1.65	Spike	P	0 - 20
2070721	Calcium	0.933	Spike	P	0 - 20
2070721	Iron	0.706	Spike	P	0 - 20
2070721	Magnesium	0.0640	Spike	P	0 - 20
2070721	Potassium	1.81	Spike	P	0 - 20
2070721	Sodium	0.507	Spike	P	0 - 20
2070721	Zinc	0.941	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P360794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070721	Aluminum	0.0239	Spike	P	0 - 20
2070721	Antimony	0.985	Spike	P	0 - 20
2070721	Arsenic	2.49	Spike	P	0 - 20
2070721	Boron	0.0319	Spike	P	0 - 20
2070721	Cadmium	0.0626	Spike	P	0 - 20
2070721	Chromium	1.99	Spike	P	0 - 20
2070721	Copper	1.47	Spike	P	0 - 20
2070721	Lead	2.45	Spike	P	0 - 20
2070721	Nickel	1.58	Spike	P	0 - 20
2070721	Selenium	3.56	Spike	P	0 - 20
2070721	Silver	0.872	Spike	P	0 - 20
2070721	Thallium	2.26	Spike	P	0 - 20

Reference Method: EPA 300.0
 Batch ID: P360572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069080	Bromide	0.0588	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P361005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069714	Chloride	0.663	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069780	Ammonia-N	1.96	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069736	Ammonia-N	3.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069747	Kjeldahl Nitrogen	2.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069481	Kjeldahl Nitrogen	2.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069777	NO2NO3-N	2.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069738	NO2NO3-N	0.972	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069789	Total-P	0.255	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070004	Total-P	5.19	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069781	O-Phosphate-P	0.282	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069748	O-Phosphate-P	2.00	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P360352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069254	Acesulfame K	11.2	Spike	P	0 - 30
2069254	AMPA	9.07	Spike	P	0 - 30
2069254	Endothall	10.9	Spike	P	0 - 30
2069254	Glufosinate	0.297	Spike	P	0 - 30
2069254	Glyphosate	3.08	Spike	P	0 - 30
2069254	Sucralose	9.68	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P360490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069849	2,4-D	2.59	Spike	P	0 - 30
2069849	Acetaminophen	12.8	Spike	P	0 - 30
2069849	Bentazon	3.26	Spike	P	0 - 30
2069849	Carbamazepine	9.88	Spike	P	0 - 30
2069849	Diuron	6.16	Spike	P	0 - 30
2069849	Fenuron	0.378	Spike	P	0 - 30
2069849	Fluridone	19.7	Spike	P	0 - 30
2069849	Hydrocodone	0.577	Spike	P	0 - 30
2069849	Ibuprofen	19.9	Spike	P	0 - 30
2069849	Imazapyr	10.1	Spike	P	0 - 30
2069849	Imidacloprid	6.91	Spike	P	0 - 30
2069849	Linuron	0.770	Spike	P	0 - 30
2069849	MCPP	11.7	Spike	P	0 - 30
2069849	Naproxen	12.1	Spike	P	0 - 30
2069849	Primidone	11.2	Spike	P	0 - 30
2069849	Pyraclostrobin	16.7	Spike	P	0 - 30
2069849	Triclopyr	19.6	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P360504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069788	Color (true)	3.04	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P360802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069779	Total Alkalinity	1.09	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P360897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069509	Total Alkalinity	0.102	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P360771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069788	TDS	1.06	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P360632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069788	TSS	7.41	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069779	Fluoride	0.516	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P360904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069509	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069806	Organic Carbon	0.0998	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P360840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068810	Organic Carbon	0.139	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P360907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069943	Organic Carbon	1.99	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2069849

Field Sample ID: G3SD0068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	33.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.4	P	30 - 160
EPA 8321B	Diuron-d6	74.3	P	30 - 160
EPA 8321B	Endothall-d6	92.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	40.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	43.8	P	30 - 160
EPA 8321B	Primidone-d5	83.5	P	30 - 160
EPA 8321B	Sucralose-d6	44.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90017

Included Lab Sample IDs: 2069776, 2069779, 2069782, 2069783, 2069788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90024

Included Lab Sample IDs: 2069778, 2069781, 2069786, 2069787, 2069790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.5	P/P	90 - 110
O-Phosphate-P	98.8	98.9	P/P	90 - 110
O-Phosphate-P	98.9	98.1	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A90025

Included Lab Sample IDs: 2069776, 2069779, 2069782, 2069783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	103	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90037

Included Lab Sample IDs: 2069788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90071

Included Lab Sample IDs: 2069788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.3	99.2	P/P	90 - 110
Sulfate	96.6	99.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90083

Included Lab Sample IDs: 2069849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	117	107	P/P	60 - 160
Endothall	93.1	101	P/P	60 - 160
Sucralose	77.9	69.0	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90092

Included Lab Sample IDs: 2069789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A90093

Included Lab Sample IDs: 2069849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	105	P/P	60 - 160
Glufosinate	97.3	90.6	P/P	60 - 160
Glyphosate	96.1	95.4	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90095

Included Lab Sample IDs: 2069777, 2069780, 2069784, 2069785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90097

Included Lab Sample IDs: 2069777, 2069780, 2069784, 2069785, 2069789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90099

Included Lab Sample IDs: 2069789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90127

Included Lab Sample IDs: 2069789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90132

Included Lab Sample IDs: 2069776, 2069779, 2069782, 2069783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	106	100	P/P	90 - 110
Total Alkalinity	99.8	106	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90132

Included Lab Sample IDs: 2069776, 2069779, 2069782, 2069783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110
Fluoride	99.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90138

Included Lab Sample IDs: 2069777, 2069780, 2069784, 2069785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90156

Included Lab Sample IDs: 2069777, 2069780, 2069789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	95.2	P/P	90 - 110
Organic Carbon	96.0	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90158

Included Lab Sample IDs: 2069777, 2069780, 2069784, 2069785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.6	P/P	90 - 110
Total-P	100	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90166

Included Lab Sample IDs: 2069850, 2069851, 2069852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.3	99.7	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	99.6	99.9	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	98.7	101	P/P	90 - 110
Sodium	101	103	P/P	90 - 110
Zinc	99.3	99.7	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90183

Included Lab Sample IDs: 2069788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90183

Included Lab Sample IDs: 2069788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90186

Included Lab Sample IDs: 2069784, 2069785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.7	96.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90208

Included Lab Sample IDs: 2069851, 2069852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	101	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2069849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	116	75.5	P/P	50 - 150
Acetaminophen	100	119	P/P	60 - 160
Bentazon	111	95.9	P/P	50 - 160
Carbamazepine	100	108	P/P	60 - 150
Diuron	102	101	P/P	60 - 150
Fenuron	91.3	112	P/P	60 - 150
Fluridone	96.2	76.3	P/P	60 - 160
Hydrocodone	101	112	P/P	60 - 150
Ibuprofen	96.9	87.1	P/P	50 - 160
Imazapyr	78.7	88.9	P/P	50 - 150
Imidacloprid	100	106	P/P	60 - 150
Linuron	102	94.7	P/P	60 - 150
MCPP	94.0	90.9	P/P	50 - 150
Naproxen	102	107	P/P	50 - 160
Primidone	100	120	P/P	60 - 150
Pyraclostrobin	88.3	80.6	P/P	60 - 150
Triclopyr	100	89.8	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90299

Included Lab Sample IDs: 2069850, 2069851, 2069852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	105	104	P/P	90 - 110
Antimony	97.3	95.9	P/P	90 - 110
Arsenic	99.3	99.0	P/P	90 - 110
Boron	106	104	P/P	90 - 110
Cadmium	98.3	98.8	P/P	90 - 110
Copper	97.2	98.1	P/P	90 - 110
Lead	95.9	96.7	P/P	90 - 110
Nickel	97.7	97.1	P/P	90 - 110
Selenium	100	98.9	P/P	90 - 110
Silver	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90334

Included Lab Sample IDs: 2069850, 2069851, 2069852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	98.2	98.0	P/P	90 - 110
Thallium	92.2	94.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90439

Included Lab Sample IDs: 2069850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	92.6	92.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.47	
EPA 200.7 Rev. 4.4	Barium	99.4		91.9	90.3			1.65
	Calcium	101						0.933
	Iron	104		100	99.6			0.706
	Magnesium	102						0.0640
	Potassium	101						1.81
	Sodium	102						0.507
	Zinc	98.6		95.2	96.1			0.941
EPA 200.8 Rev. 5.4	Aluminum	95.0		123	124			0.0239
	Antimony	96.8		96.1	95.2			0.985
	Arsenic	101		108	105			2.49
	Boron	96.0						0.0319
	Cadmium	101		88.5	88.6			0.0626
	Chromium	99.4		90.8	89.0			1.99
	Copper	97.3		97.6	96.2			1.47
	Lead	95.2		102	99.6			2.45
	Nickel	99.0		88.9	87.5			1.58
	Selenium	98.8		101	97.4			3.56
	Silver	100		90.1	89.3			0.872
	Thallium	107		108	106			2.26
EPA 300.0	Bromide	100		102	102	103		0.0588
EPA 300.0 Rev. 2.1	Chloride	99.7		94.9	101		0.663	
	Sulfate	99.9		97.4	100			
EPA 350.1 Rev. 2.0	Ammonia-N	98.6		104	101			1.96
	Ammonia-N	100		101	98.0			3.09
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103		106	109			2.45
	Kjeldahl Nitrogen	107		101	106			2.79
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101		94.8	96.8			2.03
	NO ₂ NO ₃ -N	99.0		96.5	98.0			0.972
EPA 365.1 Rev. 2.0	Total-P	103		101	101			0.255
	Total-P	103		98.2	104			5.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7		95.9	96.2			0.282
	O-Phosphate-P	98.2		98.9	101			2.00
EPA 8321B	2,4-D	75.9		94.4	96.9			2.59
	Acesulfame K	96.2		139	155			11.2
	Acetaminophen	111		103	90.8			12.8
	AMPA	88.8		87.8	97.9			9.07
	Bentazon	129		78.8	75.9			3.26
	Carbamazepine	111		102	92.4			9.88
	Diuron	120		92.1	86.4			6.16
	Endothall	91.1		90.9	101			10.9
	Fenuron	127		127	128			0.378
	Fluridone	127		135	107			19.7
	Glufosinate	89.5		87.0	86.8			0.297
	Glyphosate	93.9		114	119			3.08
	Hydrocodone	98.2		94.9	95.5			0.577
	Ibuprofen	76.0		78.9	64.6			19.9
	Imazapyr	99.5		65.2	55.8			10.1
	Imidacloprid	102		183	169			6.91
	Linuron	103		87.4	86.8			0.770
	MCPP	82.2		124	110			11.7
	Naproxen	87.3		75.2	85.0			12.1
	Primidone	119		114	102			11.2
	Pyraclostrobin	82.3		79.7	67.5			16.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Sucralose	56.9	49.1	54.5		9.68
	Triclopyr	53.8	85.9	70.6		19.6
SM 2120 B	Color (true)	101			3.04	
SM 2320 B-97	Total Alkalinity	103			1.09	
	Total Alkalinity	102			0.102	
SM 2540 C-97	TDS				1.06	
SM 2540 D-97	TSS				7.41	
SM 4500 F-C-97	Fluoride	97.4	94.7	95.6		0.516
	Fluoride	99.0	96.7	96.7		0.0
SM 5310 B-00	Organic Carbon	97.7	96.2	96.3		0.0998
	Organic Carbon	98.0	96.8	97.0		0.139
	Organic Carbon	95.4	96.4	98.7		1.99

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2069776, 2069779, 2069782, 2069783, 2069788
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2069850, 2069851, 2069852
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2069850, 2069851, 2069852
EPA 300.0 / E31780	Bromide in aqueous matrices	2069776, 2069779, 2069782, 2069783
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2069788
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2069788
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2069777, 2069780, 2069784, 2069785, 2069789
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2069777, 2069780, 2069784, 2069785, 2069789
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2069777, 2069780, 2069784, 2069785, 2069789
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2069777, 2069780, 2069784, 2069785, 2069789
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2069778, 2069781, 2069786, 2069787, 2069790
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2069849
SM 2120 B / E31780	True Color measured at 450 nm	2069788
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2069776, 2069779, 2069782, 2069783, 2069788
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2069788
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2069776, 2069779, 2069782, 2069783, 2069788
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2069776, 2069779, 2069782, 2069783, 2069788
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2069777, 2069780, 2069784, 2069785, 2069789

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/14/2019			03/14/2019 17:11	Adrian Shelby	2069776, 2069779, 2069782, 2069783, 2069788
EPA 200.7 Rev. 4.4	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 16:58	Betina Topolski	2069850
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 17:04	Betina Topolski	2069850
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 17:10	Betina Topolski	2069851
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 17:17	Betina Topolski	2069851
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 17:23	Betina Topolski	2069852
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 17:29	Betina Topolski	2069852
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/22/2019 15:01	Betina Topolski	2069851
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/22/2019 15:07	Betina Topolski	2069852
EPA 200.8 Rev. 5.4	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 04:49	Robert K Palmer	2069850
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 04:59	Robert K Palmer	2069851
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 05:08	Robert K Palmer	2069852
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 07:25	Robert K Palmer	2069850
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 07:35	Robert K Palmer	2069851
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 07:45	Robert K Palmer	2069852
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/30/2019 10:18	Robert K Palmer	2069850
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/30/2019 10:25	Robert K Palmer	2069851
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	03/30/2019 10:32	Robert K Palmer	2069852
	03/14/2019	03/20/2019 16:35	Elliott D. Healy	04/04/2019 13:03	Robert K Palmer	2069850
EPA 300.0	03/14/2019			03/17/2019 01:31	Lipi Saha	2069776
	03/14/2019			03/17/2019 01:48	Lipi Saha	2069779
	03/14/2019			03/17/2019 02:05	Lipi Saha	2069782
	03/14/2019			03/17/2019 02:22	Lipi Saha	2069783
EPA 300.0 Rev. 2.1	03/14/2019			03/21/2019 18:41	Lipi Saha	2069788
EPA 350.1 Rev. 2.0	03/14/2019			03/19/2019 09:31	Ping Hua	2069777
	03/14/2019			03/19/2019 09:38	Ping Hua	2069780
	03/14/2019			03/19/2019 09:40	Ping Hua	2069784
	03/14/2019			03/19/2019 09:41	Ping Hua	2069785
	03/14/2019			03/19/2019 13:04	Ping Hua	2069789
EPA 351.2 Rev. 2.0	03/14/2019	03/19/2019 12:20	Adrian Shelby	03/20/2019 10:20	Joseph Suarez	2069789
	03/14/2019	03/19/2019 12:20	Adrian Shelby	03/20/2019 15:35	Joseph Suarez	2069777
	03/14/2019	03/19/2019 12:20	Adrian Shelby	03/20/2019 15:37	Joseph Suarez	2069780
	03/14/2019	03/19/2019 12:20	Adrian Shelby	03/20/2019 15:38	Joseph Suarez	2069784
	03/14/2019	03/19/2019 12:20	Adrian Shelby	03/20/2019 15:40	Joseph Suarez	2069785
EPA 353.2 Rev. 2.0	03/14/2019			03/18/2019 13:16	Lauren Lees	2069777
	03/14/2019			03/18/2019 13:22	Lauren Lees	2069780
	03/14/2019			03/18/2019 13:23	Lauren Lees	2069784
	03/14/2019			03/18/2019 13:24	Lauren Lees	2069785
	03/14/2019			03/19/2019 15:12	Lauren Lees	2069789

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	03/14/2019	03/18/2019 14:30	Sima Feizi	03/19/2019 10:10	Beverly Y. Sanders	2069789
	03/14/2019	03/19/2019 13:40	Sima Feizi	03/20/2019 11:24	Beverly Y. Sanders	2069777
	03/14/2019	03/19/2019 13:40	Sima Feizi	03/20/2019 11:25	Beverly Y. Sanders	2069780
	03/14/2019	03/19/2019 13:40	Sima Feizi	03/20/2019 11:26	Beverly Y. Sanders	2069784
	03/14/2019	03/19/2019 13:40	Sima Feizi	03/20/2019 11:30	Beverly Y. Sanders	2069785
EPA 365.1 Rev. 2.0 dissolved	03/14/2019			03/14/2019 15:28	Jhamieka S. Greenwood	2069781
	03/14/2019			03/14/2019 16:42	Jhamieka S. Greenwood	2069790
	03/14/2019			03/14/2019 16:52	Jhamieka S. Greenwood	2069778
	03/14/2019			03/14/2019 16:53	Jhamieka S. Greenwood	2069786
	03/14/2019			03/14/2019 16:54	Jhamieka S. Greenwood	2069787
EPA 8321B	03/14/2019	03/18/2019 08:00	Juyoung Kim	03/18/2019 14:48	Juyoung Kim	2069849
	03/14/2019	03/18/2019 08:00	Juyoung Kim	03/18/2019 18:51	Juyoung Kim	2069849
	03/14/2019	03/19/2019 10:00	Hoor Shaik	03/26/2019 01:21	Juyoung Kim	2069849
SM 2120 B	03/14/2019			03/14/2019 18:01	Chelsea Hernandez	2069788
SM 2320 B-97	03/14/2019			03/20/2019 07:27	Dale L. Simmons	2069779
	03/14/2019			03/20/2019 07:53	Dale L. Simmons	2069776
	03/14/2019			03/20/2019 11:04	Dale L. Simmons	2069782
	03/14/2019			03/20/2019 11:16	Dale L. Simmons	2069783
	03/14/2019			03/21/2019 20:41	Dale L. Simmons	2069788
SM 2540 C-97	03/14/2019			03/15/2019 17:15	Mariam Hanna	2069788
SM 2540 D-97	03/14/2019			03/15/2019 17:15	Mariam Hanna	2069776, 2069788
	03/14/2019			03/18/2019 14:58	Yijie Li	2069779, 2069782, 2069783
SM 4500 F-C-97	03/14/2019			03/20/2019 04:56	Dale L. Simmons	2069779
	03/14/2019			03/20/2019 05:12	Dale L. Simmons	2069776
	03/14/2019			03/20/2019 06:43	Dale L. Simmons	2069782
	03/14/2019			03/20/2019 06:47	Dale L. Simmons	2069783
	03/14/2019			03/21/2019 20:41	Dale L. Simmons	2069788
SM 5310 B-00	03/14/2019			03/21/2019 01:56	Julia Storbeck	2069777
	03/14/2019			03/21/2019 02:10	Julia Storbeck	2069789
	03/14/2019			03/21/2019 09:03	Julia Storbeck	2069780
	03/14/2019			03/22/2019 07:16	Julia Storbeck	2069784
	03/14/2019			03/22/2019 07:31	Julia Storbeck	2069785